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EXAMINER

LEITH, PATRICIA A

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



### **DETAILED ACTION**

Claims 40-57 and 59-69 are pending in the application.

Claims 47-50, 52 and 62-68 remain withdrawn from examination on their merits as these claims are directed toward a non-elected invention, elected without traverse in the reply filed by Applicant on 8/27/2007.

Claims 40-46, 51, 57 and 59-61 were examined on their merits.

The previous objection to claim 55 is hereby removed due to Applicant's amendment to claim 55 to replace 'stabilising' with 'stabilizing.'

The previous rejections made over claims 41, 53-58 and 60 under 35 USC 112 Second paragraph are hereby removed due to Applicant's amendments to these claims in order to render the claims definite.

### ***Specification***

The substitute Specification submitted on 4/29/08 is accepted. Applicant's amendments to the specification overcome the previous Objection to the specification.

***Claim Rejections - 35 USC § 102***

Claims 40- 45, 51, 59-61 and 69 remain rejected under 35 U.S.C. 102(b) as being anticipated by Jacobson et al (US 5,922,560).

Applicant's arguments were fully considered, but not found persuasive.

Applicant principally argues that the astaxanthin of Jacobson et al. is found inside of the yeast cells and therefore cannot be emulsified: "An emulsion is a mixture of two immiscible substances. One substance...is dispersed in the other...The material of Jacobsen can never be in a single phase and hence can never be an emulsion as the relatively massive yeast cells containing the astaxanthin cannot form micelles or liposomes...." (p.7, Remarks). However, these arguments are not found convincing because clearly the final product of Jacobson et al. is an emulsified mixture whether or not the composition contains whole yeast cells. Clearly whole yeast cells will not be emulsified *per se*, however, the medium containing them will be emulsified which is the only requirement for the claimed invention; there is nowhere in the claims which state that the astaxanthin is an emulsifying agent or that the astaxanthin forms micelles or liposomes: In response to applicant's argument that the references fail to show certain

features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

. Further, on the other hand, while the claims are anticipated by Jacobson et al. with regard to whole yeast being contained in an emulsified medium contrary to Applicant's contentions, it is also clear that Jacobson et al. blended the mixture which would have more than likely 'cracked' the yeast cells to release the cytoplasm of the cells.

Applicant argues that "The only way to form an emulsion containing astaxanthin is to isolate the astaxanthin from the yeast before emulsification...[t]hat is what is carried out in the present invention" (p. 7, Remarks). However, again, Applicant is arguing limitations which are not found in the claims. Clearly, emulsions are made which comprise ingredients which are not emulsifiable; that is ingredients which are contained in an emulsified medium such as in the teachings of Jacobson et al.

Applicant argues that "It is noted that in column 9 of Jacobsen, the author suggests that addition of the emulsifier, oil and antioxidant can take place after drying. If the intention was to form an emulsion that what would be the point of adding an emulsifier to a composition which has only an oil phase. this suggests that the

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emulsifier is not added to form an emulsion” (p. 7, Remarks). However, this reasoning is respectfully not accepted because although Jacobsen et al. taught an alternative embodiment wherein the emulsifier, oil and antioxidant could take place after drying, Jacobson et al. explicitly teach an embodiment where the oil, antioxidant and emulsifier are added to the liquid yeast mixture and blended. This process would necessarily result in an emulsification which thereby anticipates the claimed invention. It flows naturally from the teachings of Jacobsen et al. that an emulsion is formed; to the contrary of Applicant's assertions.

Applicant argues that “The whole point of the instant patent application is actually to overcome the problems of astaxanthin bioavailability. Where the astaxanthin is still in the cell wall of a yeast, it is very poorly bioavailable. Unless the cell wall of the yeast organism is mechanically destroyed or chemically destroyed, the astaxanthin is simply not accessible to a fish or other marine organism” (p. 7, Remarks) However, first, Applicant's assertions are unsubstantiated. Secondly, Applicant is again arguing limitations which are not found in the claims. The claims are given their broadest reasonable interpretation in light of the specification. The claims are broad enough to read on the emulsified composition prepared by Jacobsen et al. It is further noted that while it cannot be absolutely determined if the cell walls of the yeast of Jacobsen et al. were 'cracked' or 'broken' this is probably the case due to the shear forces of a blender. However, Jacobsen et al. need not disclose that the yeast cells were cracked in order to meet the limitations of the claims.

Applicant argues that ‘One of the major benefits of using an emulsification of the isolated (or synthetic) astaxanthin is....’ (pp. 7-8 Remarks). Again, Applicant is arguing limitations which are not present in the claims. The claims do not recite wherein the astaxanthin is isolated or wherein the astaxanthin is synthetic and hence, Applicant’s points are moot.

Applicant argues “The examiner simply has to consider how a whole cell could be emulsified to see that it cannot happen” (p. 8, Remarks). However, Applicant again is reading limitations into the claims which are not present. The composition of Jacobsen et al. is an emulsified composition which contains yeast cells which contains astaxanthin which meets the limitations of the claimed invention.

Applicant argues that “Micelles cannot form around a whole yeast cell....” (p. 8, Remarks). Again, Applicant is arguing limitations which are not found in the claims. There is nowhere in the claims that indicates that micelles must form around the astaxanthin.

***Claim Rejections - 35 USC § 103***

Claims 40- 44, 51, 53, 57, 59-61 and 69 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (US 5,922,560) for the reasons keenly established in the previous Office action.

Claims 40- 46, 51, 53, 57, 59-61 and 69 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (US 5,922,560) in view of Yokoyama et al. (JP 408269079A) for the reasons keenly established in the previous Office action.

Claims 40-46, 51 and 57 and 59-61 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (US 5,922,560) in view of Dartey et al. (US 6,123,978) in view of Burkwall, Jr., et al. (US 4,191,783) and in view of Wein (US 4,495,206) for the reasons keenly established in the previous Office action.

Applicant's arguments were fully considered, but not found persuasive.

On page 9, Applicant argues the differences between the techniques to solving the similar problems of astaxanthin bioavailability as well as the benefits of the claimed invention, however, Applicant is not focused on any particular differences between the claimed invention, and the invention of Jacobson et al. Applicant's arguments are therefore not found convincing because they do not reasonably set forth any reason why the claimed invention is not obvious over the prior art of record.



Applicant further points to the examples in the disclosure and indicates that “Our results show a significant increase in astaxanthin content...” (p. 9). However, these remarks also fail to clearly establish the patentable distinctness and non-obviousness of the claimed invention.

Overall, Applicant’s arguments concerning these outstanding rejections under 35 USC 103(a) do not particularly point to the non-obviousness of the claimed invention and are therefore not particularly pertinent to the rejection of the claimed invention clearly set forth on the record. Applicant appears to be arguing that the end results of use of each of the compositions of Jacobsen et al. and the claimed invention have different results, however, even if the composition as claimed has a different result than that of Jacobsen et al., this does not remedy the fact that the claims are broad enough to be made obvious by the combination of the prior art.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

### **Conclusion**

No claims are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia Leith whose telephone number is (571) 272-0968. The examiner can normally be reached on Monday - Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on (571) 272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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